Draft

SEPARATION OF THE LARVAE OF THE STONEFLY FAMILIES LEUCTRIDAE AND CAPNIIDAE

Separation of larvae of the families Leuctridae and Capniidae can be difficult, especially in early instars. The most reliable character to separate the two taxa, the membranous plural fold on the venter of the abdomen, is often difficult to see in preserved specimens. The plural fold on Capniidae reaches to abdominal segment 9 (Fig. 1), while in Leuctridae the plural fold ends at abdominal segment 7 or before (Fig 2.). The shape of the abdomen can also aid in the separation of the two families; this character is generally easier to see than the pleural folds (Fig. 3, Fig. 4). The abdomen of Leuctridae is generally parallel sided, while in Capniidae the abdomen appears wider at the distal end. The hind wingpads on Capniidae are shorter than on Leuctridae; however, this character is present only on late instar larvae. In Capniidae, the length of the hind wing pad is generally less than twice the greatest width (Fig. 5). In Leuctridae, the length of the hind wing pad is 2 1/2 to 3 times the greatest width (Fig. 6).

References:

Stewart, K.W., and B.P. Stark. 2002. Nymphs of North American Stonefly Genera, Second Edition. The Caddis Press, Columbus, Ohio. 510 pp.

Suggested citation:
Pfeiffer, J., E. Kosnicki, M. Bilger, and B. D. Marshall. 2006. Separation of the Larvae of the Stonefly Families Leuctridae and Capniidae. Prepared by EcoAnalysts, Inc. for the United States Environmental Protection Agency, Office of Environmental Information, Environmental Analysis Division, Washington, DC.

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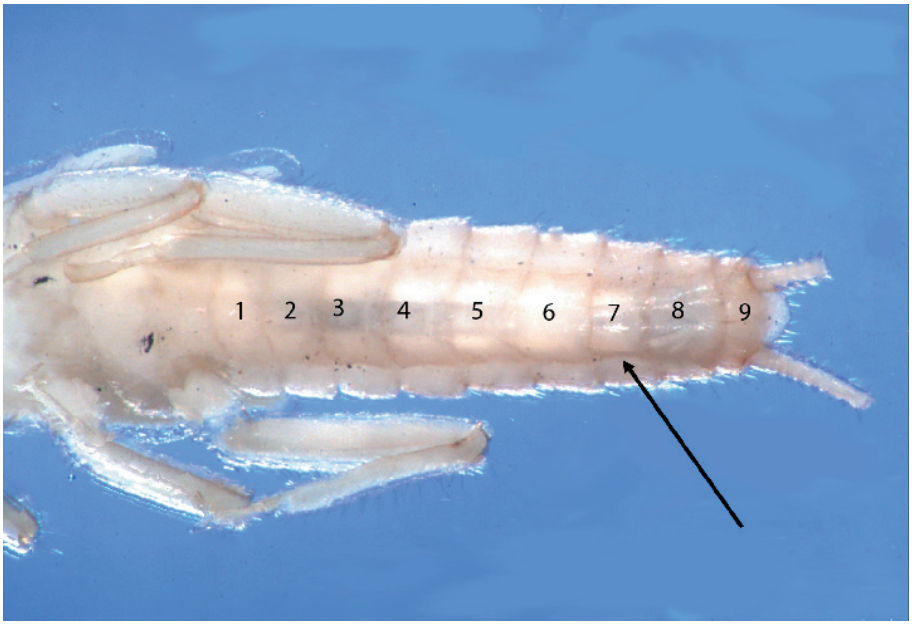

Figure 1. Ventral view of the abdominal segments of *Allocapnia* sp. (Capniidae). The pleural fold is a crease that runs just inside the lateral margin of each abdominal segment from segments 1 through 9. It is visible just inside the top and bottom margins of the abdomen as a darker line, easiest to see on the bottom side in this photo (arrow).

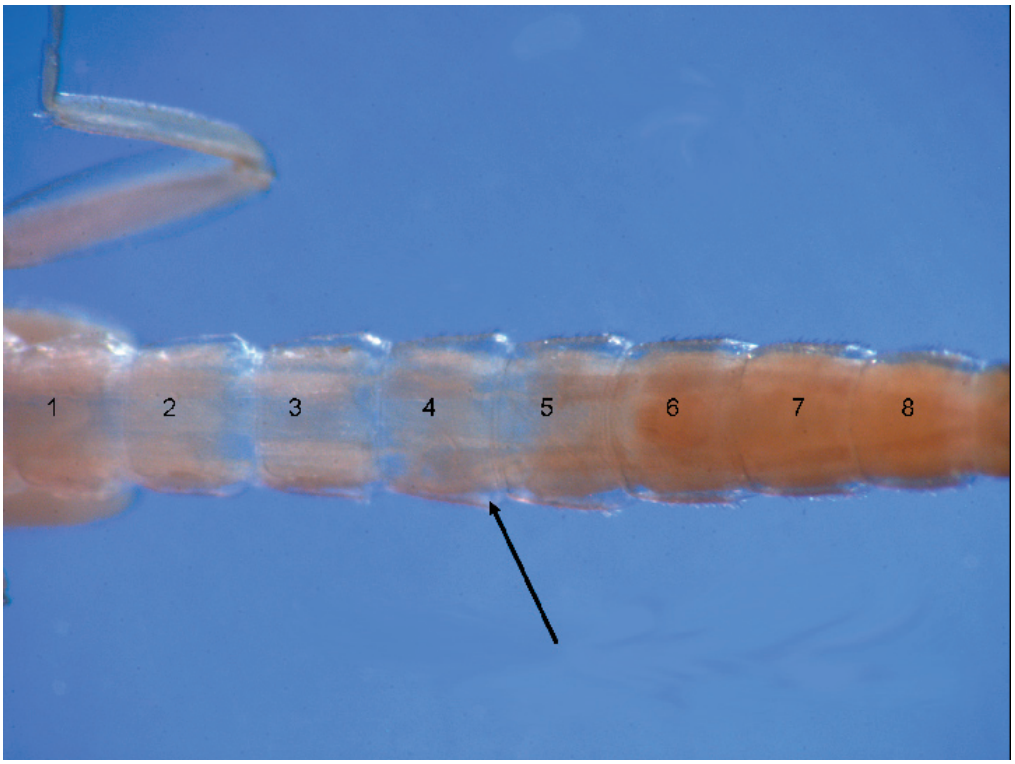

Figure 2. Ventral view of the abdomen of *Leuctra* sp. (Leuctridae). The plueral folds on Leuctridae are often difficult to see, as in this specimen. In this genus, the most commonly found Leuctridae in Region 3, the pleural fold is from segments 1-4 (arrow).

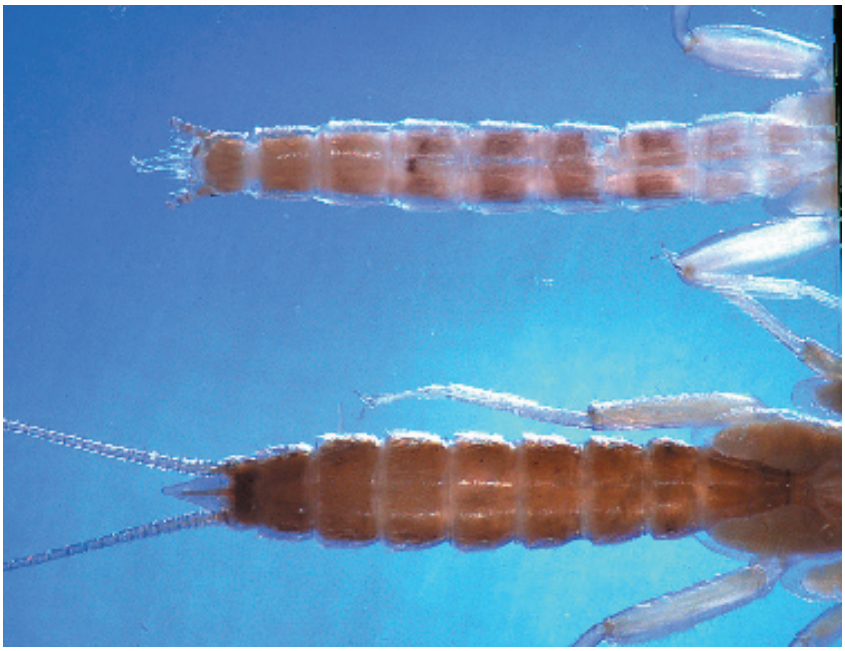

Figure 3. Dorsal view of Leuctridae (top) and Capniidae (bottom) abdomens. The sides of the abdomen on Leuctridae are relatively parallel-sided, while the sides of the Capniidae abdomen are more convex with the widest part at abdominal segment 6 to 8.

Figure 4. Another dorsal view of Leuctridae (top) and Capniidae (bottom) abdomens. Note abdominal segments 6 to 8 on Capniidae are wider than the proximal and distal segments, while in Leuctridae the width of the segments are relatively uniform throughout.

Figure 5. Dorsal view of a late instar Capniidae larva thorax (*Allocapnia* sp.). The length of the hind wing pad is shorter than twice its greatest width. In this genus, commonly collected in bioassessment samples in Region 3, the hind wing pads are truncate; in most other Capniidae, the hind wing pads are more rounded.

Figure 6. Dorsal view of a late instar Leuctridae larva thorax (*Leuctra* sp.). The length of the hind wing pads of this common eastern genus is approximately three times the greatest width.